RELEASE HIGH TECH R&D TALENT POTENTIAL

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Research and development (R&D) organizations have long been the “crown jewels” of high tech businesses—the engines of innovation and growth that set them apart in a hypercompetitive industry.

Yet, with digital consumers now demanding an ever-faster pace of innovation and a steady stream of new products, the R&D engine is sputtering.

High tech companies’ efforts to drive breakthrough innovations at speed are not falling short because of a lack of R&D investment. They are stumbling because investments aren’t aimed at improving R&D’s organizational agility and output. It’s time for high tech companies to refuel their innovation agendas.

TIME OUT

In 2016, global high tech R&D spending exceeded $204 billion. That’s up from $180 billion just two years prior. Of the five companies in the world that invest the most in R&D, four hail from high tech. Collectively, these leaders—Samsung, Intel, Alphabet and Microsoft—poured nearly $50 billion into their R&D activities.2

Unfortunately, all this spending does not correlate with improved R&D output. Returns on R&D investments have fallen by a staggering 65 percent over the past 30 years.3 The cause of this decline has nothing to do with money. It has everything to do with the time and resources that R&D workforces need to do their jobs. Accenture Strategy believes three commonly overlooked barriers stand between high tech R&D workforces and their innovation potential.
INNOVATION CENTERS: ADMINISTRATION CENTERS IN DISGUISE?

When R&D professionals carry out redundant, routine activities such as data entry, project-tracking, stage-gating and reporting, they have less time to do what they were hired to do: Innovate at speed. To free R&D workforces from the burden of mundane tasks, high tech companies have adopted innovation centers as a best practice. In fact, all high tech R&D leaders we recently interviewed consider a centralized innovation center that is separate from the company’s day-to-day operations a necessary ingredient for achieving a long-term innovation vision.⁴

Inefficiencies, however, can’t be so easily held at bay. Even in innovation centers, engineers can spend 30 percent of their time on non-value-added activities.⁵ What’s needed is a concerted effort to centralize and streamline redundant administrative tasks—not just within R&D, but across business functions. Our analysis revealed that high tech companies reduce redundancies by one-third when they consolidate tasks across their entire operations.⁶

Companies that go after inefficiencies in their R&D function and in their innovation center are more likely to optimize the time of R&D professionals, improve the center’s organizational agility, and bend the R&D cost curve to achieve better returns.
A number of high tech companies still rely solely on internal full-time resources to carry out R&D. By not capturing ideas and expertise from inside and outside their organizations, they are missing out on opportunities to innovate, limiting their organizational agility, and putting themselves at greater risk of disruption by nimbler players. Our research found 95 percent of companies that consider themselves “disruption-ready” have established collaborative R&D and innovation environments, versus 51 percent of those that are not prepared for disruption. Even more important, 96 percent of disruption-ready companies that collaborate report improved R&D / innovation performance.7

Fortunately, advances in digital technologies and collaboration platforms make it easy and cost-effective for high tech companies to access new sources of talent, ideas and insights. Dozens of online communities and social networks are now available to connect businesses with innovators and problem-solvers. Such ecosystems can take various forms:

- Cisco uses **internal open innovation** to involve 57,000 employees from 96 countries in its innovation efforts. These co-creators have submitted more than 5,000 ideas, with the potential to deliver outcomes valued at $170 million.8

- Philips uses **semi-open innovation** to accelerate the launch of new products to market. By opening its research campus in the Netherlands to researchers from 70 other companies, the company has created a vibrant hub of collaboration comprising 7,000 onsite researchers.9

- Siemens casts an even wider net with **crowd sourcing**. The company uses the Spigit innovation management platform to partner with customers, research organizations and ordinary citizens to accelerate the development of prototype solutions in the areas of 3D printing, robotics, and augmented and virtual reality.10
MACHINES AREN’T PLUGGED IN

Just as ecosystems can expand R&D’s reach, boost productivity and reduce costs, so, too, can digital technologies and machine learning applications. Yet, many high tech companies aren’t using them fully.

From our conversations with US high tech R&D leaders, we found that only a few use digital technologies for the majority of their product design, prototyping and manufacturing processes. Most continue to rely on manual, time-intensive and often redundant human interventions. That will certainly change. Given digital’s undeniable value in freeing up time, high tech R&D organizations will have to apply new technologies to help their future workforces unlock innovation. Those that don’t will be left behind.

Some high tech companies aren’t waiting to be marginalized. They are applying Robotic Process Automation (RPA) to carry out repetitive human tasks more quickly, with minimal errors and at a lower cost. In fact, using “robots” for repetitive tasks is 30 to 80 percent less expensive than hiring employees to perform the same tasks. But the greater benefit comes from freeing R&D professionals’ time. RPA produces a greater than 40 percent increase in employees’ ability to focus on more valuable design work.
PRIMING THE TALENT PUMP

High tech companies that want to innovate more quickly and effectively must build the organizational agility and capabilities that will fully support their R&D talent. Taking action today can help them unleash the innovation potential of their future workforce tomorrow.

ADOPT A ZERO-BASED APPROACH TO INNOVATION MANAGEMENT

To improve the performance, efficiency and output of their innovation centers, high tech companies need a new approach. Rather than basing investment decisions and priorities on previous years’ activities and budgets, R&D leaders need to think about what innovation should cost, as well as the workforce skills they need to achieve their objectives. With “should-cost” modeling and a forward-looking approach to resource allocation, it is easier for them to identify opportunities to centralize or automate processes and minimize redundancies. Importantly, this zero-based approach must become embedded as an ongoing process that continually aligns resources with innovation priorities.

STREAMLINE AND AUTOMATE

Standardizing and centralizing low value-added work for the R&D workforce is a must. Digital technologies can certainly help. Robotic Process Automation holds particular potential. In addition to freeing up highly skilled talent and accelerating the R&D organization’s innovation output, RPA drives efficiencies throughout the R&D organization. Cost savings can be reinvested to drive new innovations and improve future workforce performance.

TAP INTO AN ECOSYSTEM OF TALENT

With open innovation, R&D can benefit from the ideas and skills of resources that reside outside a company’s four walls. But before opening the R&D organization to outsiders, leaders need to define what they hope to accomplish and the type of ecosystem and skill sets that will help them achieve their goals. Do they want an ecosystem to serve as a source of new ideas to fill their innovation pipeline? Do they want technical expertise they don’t currently have in-house? Do they want collaborative partners with whom they will develop joint solutions? Armed with that understanding, R&D leaders can determine how to not only align incentives among the ecosystem participants, but also measure success.
In the digital age, consumers’ expectations of high tech providers are at an all-time high. Their appetite for new products and services, delivered at breakneck speed, is relentless. To thrive—and in some cases, survive—in this new environment, high tech companies must do whatever they can to help their R&D workforces generate new ideas and accelerate the product development cycle. That effort starts by identifying and eliminating the hidden barriers that so often slow them down.
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ABOUT THE RESEARCH/ANALYSIS

Accenture Strategy gathered data and insights from high tech clients with whom we were engaged to drive improvements in the R&D organization. In addition, we conducted individual interviews with R&D managers, directors, and vice presidents at large technology companies to further understand the opportunities for—and barriers to—breakthrough innovation.

Notes:

5. Ibid
6. Ibid
10. www.spigit.com
12. Ibid